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PATENT APPLICATION
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Christopher M. Paterson.

Application No.: 10/646,233

Group No.: 3723

Filed: August 22, 2003

Examiner: Gary K. Graham

For: VACUUM CLEANER BRUSHROLL

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BRIEF ON APPEAL

INTRODUCTION

Pursuant to the provisions of 37 CFR § 41.31 *et seq.*, Applicants hereby appeal to the Board of Patent Appeals and Interferences (the "Board") from the Examiner's final rejection dated October 18, 2007. A Notice Of Appeal is concurrently filed. The Notice Of Appeal and the Appeal Brief are herein accompanied by the notice of appeal filing fee per 37 CFR § 41.20(b)(1) and by the requisite appeal brief filing fee per 37 CFR § 41.20(b)(2).

REAL PARTY IN INTEREST

The entire interest in the present application has been assigned to Oreck Holdings, LLC, as recorded at Reel 014429, Frame 0196.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

Claims 1-7, 9-21, and 23-28 are pending.

Claims 7, 9-14, 21, and 23-28 are withdrawn from consideration.

Claims 1-6 and 15-20 have been finally rejected.

Claims 1-6 and 15-20 are on appeal.

STATUS OF AMENDMENTS

There are no pending amendments.

SUMMARY OF CLAIMED SUBJECT MATTER

A vacuum cleaner brushroll 100 according to the embodiment of claim 1 comprises a brushroll body 101 and at least one row of bristle tufts disposed on the brushroll body 101 (see FIGS. 4-7 and see page 3, line 30 to page 4, line 3). The at least one row of bristle tufts comprises a first tuft 103 of a first effective length from the brushroll body 101 and at least a second tuft 104 of a second effective length that is different from the first effective length (see page 4, lines 6-25). The first tuft 103 is oriented at a first angle with respect to a radius direction of the brushroll body 101 and the second tuft 104 is oriented at a second angle that is different from the first angle (see FIG. 5 and see page 5, lines 21-25). FIG. 5 of the drawings comprises an end-on view of the brushroll 100 of this embodiment.

A method of forming a vacuum cleaner brushroll 100 according to claim 15 comprises providing a brushroll body 101 and providing at least one row of bristle tufts disposed on the brushroll body 101 (see FIGS. 4-7 and see page 3, line 30 to page 4, line 3). The at least one row of bristle tufts comprises a first tuft 103 of a first effective length from the brushroll body 101 and at least a second tuft 104 of a second effective length that is different from the first effective length (see page 4, lines 6-25). The first tuft 103 is oriented at a first angle with respect to a radius direction of the brushroll body 101 and the second tuft 104 is oriented at a second angle

that is different from the first angle (see FIG. 5 and see page 5, lines 21-25).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1-3, 6, 15-17 and 20 are obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 4,912,805 (Krasznai et al.) in view of GB Patent No. 2,041,741 (Stubbs).
2. Whether claims 4 and 18 are obvious under 35 U.S.C. § 103(a) over Krasznai in view of Stubbs and further in view of U.S. Patent No. 2,459,007 (Taylor).
3. Whether claims 5 and 19 are obvious under 35 U.S.C. § 103(a) over Krasznai in view of Stubbs and further in view of U.S. Patent No. 3,188,673 (Newman).

ARGUMENT

OUTLINE

- I. Summary of the brief on appeal.
- II. Summary of the requirements for *prima facie* obviousness.
- III. Discussion of the § 103(a) obviousness rejection of claims 1-3, 6, 15-17, and 20.
- IV. Discussion of the § 103(a) obviousness rejection of claims 4 and 18.
- V. Discussion of the § 103(a) obviousness rejection of claims 5 and 19.

I. Summary of the brief on appeal

- A. The 35 U.S.C. § 103(a) rejection of claims 1-3, 6, 15-17, and 20 is improper because a *prima facie* case for obviousness has not been established, for the following reasons:
 - (1) the Krasznai reference does not teach an angling of brushroll tufts, (2) the Stubbs

reference does not teach angling tufts in a row at different angles, and (3) the combination is improper and without motivation.

- B. The 35 U.S.C. § 103(a) rejection of claims 4 and 18 is improper because independent claims 1 and 15, from which claims 4 and 18 depend, are patentable.
- C. The 35 U.S.C. § 103(a) rejection of claims 5 and 19 is improper because independent claims 1 and 15, from which claims 5 and 19 depend, are patentable.

II. Summary of the requirements for *prima facie* obviousness.

To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP 2142. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

If an independent claim is nonobvious under 35 U.S.C. 103, then any claim dependent therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. In re Kahn, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (discussing rationale underlying the motivation-suggestion-teaching requirement as a guard against using hindsight in an obviousness analysis).

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

III. Discussion of the § 103(a) obviousness rejections of claims 1-3, 6, 15-17, and 20.

Claims 1-3, 6, 15-17, and 20 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent 4,912,805 (Krasznai et al.) in view of Great Britain Patent 2,041,741 (Stubbs). Applicants respectfully traverse the rejection.

Independent claims 1 and 15 require at least one row of bristle tufts disposed on the brushroll body. The at least one row of bristle tufts comprise a first tuft of a first effective length from the brushroll body and at least a second tuft of a second effective length that is different from the first effective length. The first tuft is oriented at a first angle with respect to a radius direction of the brushroll body and the second tuft is oriented at a second angle that is different from the first angle.

Krasznai teaches having different tuft lengths in order to accommodate differing floor surfaces (see col. 1, line 65 to col. 2, line 2). Krasznai does not disclose a first bristle tuft at a first angle from a radius direction and a second bristle tuft at a second angle that is different from the first angle. In contrast, Krasznai only discloses radially oriented bristle tufts. Krasznai does not disclose even a single angled bristle tuft.

Stubbs teaches that the angle of a tuft with respect to a radius can vary between one degree and six degrees. Stubbs refers to this as a "lead angle." Stubbs teaches that the lead angle can be varied within this given range according to 1) a bristle material, 2) the length of the tufts, 3) the speed of rotation of the brushroll, and 4) the amount of side angle of a tuft (see lines 12-16, lines 37-39, and lines 62-64).

Stubbs does not disclose a row of bristle tufts including first tufts and second tufts, with a first tuft being oriented at a first angle and a second tuft being oriented at a second angle that is different from the first angle. Instead, FIG. 3 of Stubbs shows *two rows* 2 of tufts. *All* of the tufts of *each* row 2 are angled. The teaching of angling an **entire row of tufts** in Stubbs does not teach the angling of **individual tufts of a row**. The teaching of angling an entire row of tufts in Stubbs does not teach a first tuft at a first angle and a second tuft at a second angle. A combination of Krasznai and Stubbs therefore does not produce the first and second tufts at first and second angles according to the invention.

The final Office Action appears to claim that Stubbs teaches tufts of bristles at different angles in the tufts of a row. This is incorrect. Stubbs does not teach or suggest any non-uniformity of bristle tufts. Note that FIG. 3 and FIGS. 4a, 4b, and 4c show rows of tufts that are uniform and where all tufts are positioned at the same angle. FIG. 1 shows a row of tufts that is non-uniform only with regard to a lateral angling of the tufts, such that a vacuum cleaner according to Stubbs would offer a greater cleaning ability to the sides of the brushroll.

Stubbs teaches angling a row of tufts for the purpose of increasing a flick action in order to increase a dust collection property, *i.e.*, a cleaning effectiveness (see lines 6-11). The final Office Action states that “Stubbs suggests that tufts of differing lengths will have differing angles to achieve [sic] the proper flick action.” This is only partially correct, as Stubbs does not teach the varying of tufts in a row of tufts. This statement of the Office Action appears to imply that Stubbs includes tufts of multiple varying angles in a single row. This is simply incorrect. What Stubbs actually discloses is that the angle of an entire row of tufts can be varied, and can be varied according to the “length of the *tufts* of bristles”, *i.e.*, the tuft length of an entire row (see line 38 of Stubbs)(emphasis added).

The combination is improper. The Court of Appeals for the Federal Circuit has held that “Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so.” In re Kahn, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (discussing rationale underlying the motivation-suggestion-teaching requirement as a guard against using hindsight in an obviousness analysis).

The final Office Action suggests that the motivation to combine would be “to increase the dust collecting property of the brush by causing a flick action of the tufts.”

The suggested motivation is improper. Stubbs discloses that the ends of the tufts are tangentially trimmed (see line 40). FIG. 3 of Stubbs shows that, as a result, the bristles of a tuft all contact the floor at the same time. Stubbs alleges that this creates a flick action, wherein the bristles move forward faster than they would through flat-ended tufts and normal rotation of the brushroll.

In contrast, a tuft end of the present invention is substantially flat and perpendicular to the

tuft's length. Consequently, angling of the tuft of the present invention would create a different floor contacting configuration and would not generate a flick action as in Stubbs. As a result, there would be no motivation to try to add the flick action of Stubbs to the brushroll of Krasznai. The alleged motivation therefore fails.

The Court of Customs and Patent Appeals held that “[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Here, the final Office Action proposes to change the principle of operation (of both the invention and Krasznai) to bristle tufts configured to generate a flick action. This is improper.

The *Response to Arguments* section of the final Office Action asserts that the previous response argues against the references individually and therefore improperly. However, Applicants were merely showing that a combination of Krasznai and Stubbs would not render the claims obvious, as neither Krasznai nor Stubbs taught or suggested the configuration of the brushroll of the present invention including first and second tufts of first and second lengths and first and second angles. Because neither reference teaches a brushroll including first and second tufts of first and second lengths and first and second angles, then as a result the combination does not achieve the elements of the independent claims.

The *Response to Arguments* section of the final Office Action asserts that “[i]t is not clear where Stubbs discloses that angling the tufts is according to the length of a row of tufts.” Applicants herein clarify the wording. Stubbs does not relate a *row length* to a tuft angle. Instead, Stubbs relates the tuft length (of a row of tufts) to a tuft angle. Therefore, were Stubbs to increase or decrease a tuft length (of the tufts of a row), then Stubbs would obviously change the angle of all tufts in the row.

Independent claims 1 and 15 therefore include features that are neither taught nor suggested by any of the cited references. Claims 2-3, 6, 16-17, and 20 are allowable for the same reasons as claims 1 and 15.

IV. Discussion of the § 103(a) obviousness rejections of claims 4 and 18.

Claims 4 and 18 stand rejected under 35 U.S.C. § 103(a) as being obvious over Krasznai and Stubbs and further in view of U.S. Patent No. 2,459,007 (Taylor). Claims 4 and 18 depend from independent claims 1 and 15 and therefore are patentable for the reasons previously discussed.

V. Discussion of the § 103(a) obviousness rejections of claims 5 and 19.

Claims 5 and 19 stand rejected under 35 U.S.C. § 103(a) as being obvious over Krasznai and Stubbs and further in view of U.S. Patent No. 3,188,673 (Newman). Claims 5 and 19 depend from independent claims 1 and 15 and therefore are patentable for the reasons previously discussed.

Conclusion

In view of the above, applicant respectfully request that the examiner's rejection of claims 1-6 and 15-20 be reversed.

The Director is hereby authorized to charge the \$500.00 fee for filing a brief in support of an appeal and to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 502382. An additional copy of this sheet is attached hereto.

Respectfully submitted,

Date: 12/7/07


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CLAIMS APPENDIX

1. A vacuum cleaner brushroll, comprising:
a brushroll body; and
at least one row of bristle tufts disposed on the brushroll body, with the at least one row of bristle tufts comprising a first tuft of a first effective length from the brushroll body and at least a second tuft of a second effective length that is different from the first effective length, with the first tuft being oriented at a first angle with respect to a radius direction of the brushroll body and with the second tuft being oriented at a second angle that is different from the first angle.
2. The vacuum cleaner brushroll of claim 1, wherein the first tuft is of a first diameter and the second tuft is of a second diameter that is different from the first diameter.
3. The vacuum cleaner brushroll of claim 1, wherein the first tuft is of a first stiffness and the second tuft is of a second stiffness that is different from the first stiffness.
4. The vacuum cleaner brushroll of claim 1, wherein the first tuft is of a first material and the second tuft is of a second material that is different from the first material.
5. The vacuum cleaner brushroll of claim 1, wherein the first tuft is of a first color and the second tuft is of a second color that is different from the first color.
6. The vacuum cleaner brushroll of claim 1, wherein the first tuft is of a first number of bristles and the second tuft is of a second number of bristles that is different from the first number of bristles.
7. The vacuum cleaner brushroll of claim 1, wherein the at least one row of bristle tufts is substantially radially-outwardly oriented from the brushroll body.

8. (Cancelled)
9. A vacuum cleaner brushroll, comprising:
a brushroll body; and
at least one row of substantially radially-outwardly oriented bristle tufts disposed on the
brushroll body, with a particular tuft of the at least one row comprising first bristles of a
first effective length from the brushroll body and at least second bristles of a second
effective length that is different from the first effective length.
10. The vacuum cleaner brushroll of claim 9, wherein the first bristles are of a first diameter
and the second bristles are of a second diameter that is different from the first diameter.
11. The vacuum cleaner brushroll of claim 9, wherein the first bristles are of a first stiffness
and the second bristles are of a second stiffness that is different from the first stiffness.
12. The vacuum cleaner brushroll of claim 9, wherein the first bristles are of a first material
and the second bristles are of a second material that is different from the first material.
13. The vacuum cleaner brushroll of claim 9, wherein the first bristles are of a first color and
the second bristles are of a second color that is different from the first color.
14. The vacuum cleaner brushroll of claim 9, wherein the first bristles are formed of a first
number of bristles and the second bristles are formed of a second number of bristles that is
different from the first number of bristles.
15. A method of forming a vacuum cleaner brushroll, said method comprising:
providing a brushroll body; and
providing at least one row of bristle tufts disposed on the brushroll body, with the at least

one row of bristle tufts comprising a first tuft of a first effective length from the brushroll body and at least a second tuft of a second effective length that is different from the first effective length, with the first tuft being oriented at a first angle with respect to a radius direction of the brushroll body and with the second tuft being oriented at a second angle that is different from the first angle.

16. The method of claim 15, wherein the first tuft is of a first diameter and the second tuft is of a second diameter that is different from the first diameter.

17. The method of claim 15, wherein the first tuft is of a first stiffness and the second tuft is of a second stiffness that is different from the first stiffness.

18. The method of claim 15, wherein the first tuft is of a first material and the second tuft is of a second material that is different from the first material.

19. The method of claim 15, wherein the first tuft is of a first color and the second tuft is of a second color that is different from the first color.

20. The method of claim 15, wherein the first tuft is of a first number of bristles and the second tuft is of a second number of bristles that is different from the first number of bristles.

21. The method of claim 15, wherein the at least one row of bristle tufts is substantially radially-outwardly oriented from the brushroll body.

22. (Cancelled)

23. A method of forming a vacuum cleaner brushroll, said method comprising:
providing a brushroll body; and
providing at least one row of substantially radially-outwardly oriented bristle tufts disposed

on the brushroll body, with a particular tuft of the at least one row comprising first bristles of a first effective length from the brushroll body and at least second bristles of a second effective length that is different from the first effective length.

24. The method of claim 23, wherein the first bristles are of a first diameter and the second bristles are of a second diameter that is different from the first diameter.

25. The method of claim 23, wherein the first bristles are of a first stiffness and the second bristles are of a second stiffness that is different from the first stiffness.

26. The method of claim 23, wherein the first bristles are of a first material and the second bristles are of a second material that is different from the first material.

27. The method of claim 23, wherein the first bristles are of a first color and the second bristles are of a second color that is different from the first color.

28. The method of claim 23, wherein the first tuft is of a first number of bristles and the second tuft is of a second number of bristles that is different from the first number of bristles.

EVIDENCE APPENDIX

(None)

RELATED PROCEEDINGS APPENDIX

(None)